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## ROCKY MOUNTAIN SPOTTED FEVER A Summary of Recent Literature Dealing With Virulence and Therapeutic Value of Immune Rabbit Serum

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At the time of this writing considerable public interest is being displayed over the apparent increase in the incidence of Rocky Mountain spotted fever in Delaware. As would be expected, a similar degree of interest was displayed by physicians, particularly those who were treating the cases.

Recent literature on Rocky Mountain spotted fever is somewhat diversified in nature, ranging from discoveries of new vectors of the disease to studies of the newest therapeutic agent. In this article an attempt is made to draw together the outstanding points of these studies and present the conclusions of the various authors.

For several years it has been generally accepted that the western strain of the virus of Rocky Mountain spotted fever was more virulent than the eastern strain and hence accompanied by a higher mortality rate. This conclusion was based on virulence tests in guinea pigs. In recent years, however, a new strain was recovered from a case receiving his infection in Virginia, which was as virulent to guinea pigs as the western strains. Moreover, at about the same time, from a case receiving his infection in Wyoming, there was recovered a strain the virulence of which was extremely mild for guinea pigs.

Prior to the recovery of these "new" strains in both east and west the Division of Infectious Diseases, National Institute of Health had published statements in disaccord with the accepted difference in virulence and fatality between eastern and western strains.

Following up the recovery of these two strains, Topping<sup>1</sup> reports a study of cases oc-

curing in the 10-year period 1930-39 inclusive which led to the conclusion that the disease is as fatal in the east as in the west. Material for his report was furnished by the State Departments of Health of Montana and Idaho in the west and of Maryland and Virginia in the east. Presented for study for the 10-year period were 747 cases from the west and 661 from the east.

TABLE I.

	West	East
Cases .....	747	661
Deaths .....	210	122
Fatality Rate .....	28.1	18.4

However, in the two western states 373 or 50.2% of the cases occurred in persons 40 years of age and over, while in the west this was reversed, there being 310 or 46.8% occurring in the age group under 15 years. The age distribution and fatality rate are shown below:

TABLE II.  
Under 15

	Total Cases	Cases	% of Total	Deaths	Fatality Rate
West .....	747	108	14.4	13	12.0
East .....	661	310	46.8	40	12.9

15 - 39

	Cases	% of Total	Deaths	Fatality Rate
West .....	264	35.3	40	15.1
East .....	189	28.5	21	11.1

40 +

	% of Cases	Total	Deaths	Fatality Rate
West .....	375	50.2	157	41.8
East .....	162	24.5	61	37.3

The conclusion drawn here was that there was no significant difference in fatality rate in comparative age groups between the "eastern" and "western" type of the disease. It is obvious, however, that there is a very significant difference between the fatality rate in the age group 40 and over and those of the younger age groups.

There was no indication in the material from which the above was summarized of the nature of medication. However, Topping<sup>2</sup> again reports a series of experiments in which immune rabbit serum was used in treating infected guinea pigs and monkeys, and also a

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series of human cases in which the immune rabbit serum was used.

The conclusion reached in the experimental animals was that the time factor was extremely important even with a relatively small dose of serum. Repeated experiments with monkeys and guinea pigs indicated that an adequate dose given early following infection gave the best results.

In studying the human cases it was impossible to use an untreated group as a control, so the author of the report used the 10-year group of cases in Table II above and from the fatalities occurring within the group over an experience period of 10 years expectancy in fatality and fatality rates was applied to a series of 19 cases treated with immune rabbit serum after the third day of the rash, and to a series of 52 cases treated on or before the third day of the rash. These cases for a 2-year period, 1941-42, are summarized in Table III.

TABLE III

Treatment—immune serum							
		Under 15		15 - 39		40 +	
		Total	Cases	Deaths	Cases	Deaths	Cases
After 3rd day of rash	19	10	1	4	0	5	1
On or before 3rd day	52	26	0	14	0	12	2

Next, the expectancy in cases and deaths were from Table II and applied to Table III with the following results:

TABLE IV

Observed and expected fatalities in 19 cases treated after the 3rd day of rash:

		Under 15		15 - 39		40 +	
		Total	Cases	Deaths	Fatality Rate (%)	Cases	Deaths
Observed (from Table III)	19	10	1	10	4	0	5
Expected (from Table II)	19	10	1.25	12.5	4	0.5	13

TABLE V

Observed and expected fatalities in 52 cases treated on or before the 3rd day of rash:

		Under 15		15 - 39		40 +	
		Total	Cases	Deaths	Fatality Rate (%)	Cases	Deaths
Observed (from Table III)	52	26	0	26	0	0	0
Expected (from Table II)	52	26	9.8	18.8	2.2	12.5	12.5

		Under 15		15 - 39		40 +	
		Total	Cases	Deaths	Fatality Rate (%)	Cases	Deaths
Observed (from Table III)	14	0	0	12	2	16.6	16.6
Expected (from Table II)	14	1.8	13	12	4.8	40	40

While the series of cases are small and it might be dangerous to draw any conclusion from the interpretation, at least the inference is that immune serum is of value if used early in the infection. There would also appear to be a marked difference in fatality rates between the age group of forty and over and the others.

Up to the present there have been 13 cases reported in Delaware in 1943. These 13 cases were treated by 8 physicians; 9 of the 13 cases were treated with immune rabbit serum. There were 3 fatalities, one of whom had received immune rabbit serum.

In view of the fact that the disease is sporadic and that untreated controls cannot be used for comparison, it would be highly desirable that physicians keep a record of each case of this disease which might be made available for study.

- (1) Topping, N. H.: Pub. Health Reps., 56: Aug. 22, 1941.  
 (2) Topping, N. H.: Pub. Health Reps., 58: May 14, 1943.

### WEIL-FELIX REACTION

#### (ROCKY MOUNTAIN SPOTTED FEVER)

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The Weil-Felix reaction, although nonspecific, affords a reliable method for the laboratory diagnosis of Rocky Mountain fevers and related diseases. On the other hand, studies based upon specificity, such as histological examinations of skin lesions, suggested by Frankel in 1914, and inoculation of blood from patients into guinea pigs, described by Nicolle in 1911, both important diagnostically, are not practicable routine procedures. The complement fixation test with specific extracts, as suggested by Cuthoore in 1910 and Markel in 1913, and the globulin test developed by Weltman in 1916 have not proved to be of diagnostic value.

In 1916 Weil and Felix found that a strain of proteus vulgaris isolated from the urine of a typhus fever patient was agglutinated to a high titer not only with serum of the patient but also by the serum of other individuals suffering from typhus. Apparently no direct connection exists between typhus fever and the proteus X bacillus since they are found in only a small number of patients, and are not demonstrable in the lesions, and

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do not produce the disease experimentally. Guinea pigs inoculated with proteus X bacilli are not subsequently immune to infectious typhus material nor can the bacilli be recovered after true typhus infections.

There is evidence to believe that a close relationship exists among the different types of typhus, and that the causative agent of typhus is related to that of Rocky Mountain spotted fever, tsutsugamuchi fever (Japanese river fever) and French disease called *fevre boutemuse*. This has been determined to some extent by serological reactions and also cross-protection experiments in animals. The differential diagnosis of Rocky Mountain spotted fever and typhus by inoculation of male guinea pigs and by protection tests is carried out by very few laboratories in this country. The necessity for special equipment, maintenance of virus strains and expense make it an impractical procedure for routine public health laboratories.

In view of the marked specificity of the agglutination of proteus X strains in the sera of typhus fever patients it might seem that little difficulty would occur in making serologic tests for the presence or absence of the disease. However, in the studies made by Welch it was demonstrated that the cultivation of proteus X19 strains on certain media resulted in their dissociation. The variants which developed were found to give inaccurate results in Weil-Felix test when used as a control sera from patients with no clinical symptoms of the disease. In a study of 19 diagnostic proteus X strains obtained from laboratories in various sections of the United States and Canada, only six were nonmotile in spite of the fact that in several instances the motile strains had been obtained originally from nonmotile culture.

The diagnostic agglutinins present in the blood serum of typhus or Rocky Mountain fever patients are invariably of the somatic type, and the O type antigen made from nonmotile strains of proteus group should be used exclusively in making diagnostic tests, not only because the specific antigen relationship between the virus of Rocky Mountain spotted fever, etc., and proteus X19 but also because of the possible presence of flagellar agglutinins in the patients' serum which are not diag-

nostic of Rocky Mountain spotted fever. These nonspecific reactions will be obtained with motile strains of proteus X19 because of their antigenic relationship.

#### LABORATORY EXAMINATION

To establish the diagnosis, a series of three blood samples should be submitted in both questionable and clinically positive cases. The first is taken soon after the nature of the illness is suspected or when rash appears. At this time the blood is usually negative, but is needed to check the results from later samples; the second is taken between the 12th and 15th day and is often positive, particularly if results of the first sample are on hand for comparison, but titer is sometimes too low to be significant. The third is taken during early convalescence, and is usually definitely positive, but results of earlier tests may be needed for comparison. Occasionally a positive test is not obtained until 30 days after onset or even later. If only two specimens can be obtained, the first should be taken as soon as the nature of infection is suspected, and the second on the 12th day. A marked increase in titer ascertained by repeated examination is helpful in reaching a diagnosis.

#### SELECTIVE SERVICE EXAMINATIONS

From January 1st to June 30, 1943, 11,972 blood tests for the detection of syphilis were completed for the Selective Service Boards of Delaware. The blood specimens were examined by the Kahn presumptive test. The specimens which were positive or gave doubtful reactions by this test were then examined by Kahn standard precipitation test, and those which gave indefinite reactions were examined by Kolmer Wassermann. Of the total samples of blood examined, there were 9.3% positive; of which 1.2% were repeat specimens; thus 8.1% of all selectees were positive. By race, there were 8,876 specimens of blood from white men, of which 2.4% were positive and .4% of these specimens were repeat specimens; thus approximately 2% of the white selectees were positive. There were 3,096 specimens of blood from negro men during this period, of which 28.77% were positive, of which 2.46% were repeat specimens; thus approximately 26.31% of negro selectees were positive.



### HIGH SCHOOL XRAY SURVEY

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For the past several years the National Tuberculosis Association has been sponsoring an early diagnosis campaign on tuberculosis case finding during the month of April and May. This year the following slogan was adopted:

**"FOLLOW THE EXAMPLE OF THE ARMED FORCES, AND GET A CHEST X-RAY"**

There is plenty of good common sense in this slogan, because it is estimated more than a billion dollars has been spent caring for tuberculous World War No. 1 veterans. To forestall similar expenses after this greatest of all wars the armed forces have determined to keep tuberculosis out of the services. Since the spring of 1942 the government has provided chest x-ray service to every inductee. Prior to this time or until x-ray equipment was provided at the induction centers more than 2,000 Delaware selectees were x-rayed at the Brandywine Sanatorium. This was a cooperative project of the Selective Service system of the state, the official health agencies, members of the medical profession, the staff of the Brandywine Sanatorium and the Delaware Anti-tuberculosis Society. Thus an example has been set by the armed forces.

But what about the many more millions of men and women on the home front? What about the millions of young people in high schools and colleges, who will be the soldiers and industrial workers of tomorrow?

Soon after Pearl Harbor the Anti-tuberculosis Society began to adjust its program to fit into the war picture, with particular emphasis upon the protection of civilian health on the home front. The executive secretary was instructed to make searching inquiry into the various methods of mass xray surveys. In November of 1942 Dr. W. H. Lemmel, Superintendent of the Wilmington Public Schools, discussed with the Wilmington Board of Education the possibility of xraying high school students, as well as faculty members

and school employees. Later Dr. Lemmel made formal request in the name of the Board of Education to the Anti-tuberculosis Society for this service. The Society took immediate favorable action and authorized the executive secretary to complete details. After careful consideration of various methods, it was decided to employ the services of the National Xray Surveys, Inc., using the specially designed portable photo-roentgen 35 millimeter unit equipped with Zeiss lenses, developed exclusively for photo-roentgen work. This type of apparatus registers the chest images on a fluoroscopic screen from which is taken the 35 millimeter film. The project was prefaced in each high school by an intensive educational program which Dr. Lemmel stated was "a campaign to emphasize the importance of discovery and early treatment in the eradication of tuberculosis."

The scheduling of xraying approximately 7,500 people in many different schools located in various sections of the city was planned most efficiently by Mr. M. Channing Wagner, Assistant Superintendent of Schools in charge of Secondary Education and Health Service. Mr. Wagner was assisted by the following principals who aided in scheduling the work in their particular schools; William P. Baneroft School, Thomas W. Mulrooney; Thomas F. Bayard School, Robert N. Foulk; H. Fletcher Brown Vocational School, William E. White; George W. Carver Vocational School, Arthur D. Jewell; P. S. duPont High School, Ralph L. Talbot; Howard High School, George A. Johnson; Warner Junior High School, Frank M. Heal; Wilmington High School, Clarence A. Fulmer. The first xrays were taken at Wilmington High School on March 15th. More than 1,300 xrays were made the first two days, and then the equipment was moved to succeeding schools as scheduled. Each person received a card stamped with his name and a number. This card was then placed in the xray machine and the name and number were recorded on the film for each person. Before receiving the xray each person was measured for body depth or thickness on a callibrator machine. The equipment was operated by an xray engineer and three technicians of the National Xray Surveys, Inc.

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In May the survey was expanded to include the xraying of students and faculty members of Wilmington's three parochial high schools: Salesianum High School, Ursuline Academy, and St. Elizabeth's, and the State College at Dover.

Details and scheduling for these schools were handled by the Rev. Joseph L. McCoy, Principal of Salesianum High School, and Mother Immaculata of the Ursuline Academy. The project then represented a complete survey of Wilmington's public and parochial high schools and far exceeded any similar survey ever conducted in the state.

When the xraying in each high school was completed the films were sent to the laboratory of the National Xray Surveys, Inc., for development. They were then sent to the Brandywine Sanatorium for interpretation. Later stereoscopic xrays were taken of any suspicious or abnormal appearing cases for further study and diagnosis.

**Total**  
**Number Percent**

Total Number xrayed .....	7,501	
Number re-xrayed 14x17 .....	141	1.9
Number to be re-xrayed .....	48	.64

**Chest Findings:**

Hilum Deposits .....	190	2.5
Pulmonary Nodule .....	215	3.
Pulmonary T. B., Min. Stable ....	3	.04
Pulmonary, T. B., Min., Unstable ..	3	.04
Pulmonary T. B., Mod. Adv., Unstable .....	2	.027
Pulmonary, T. B., Miliary, healed ..	1	.013
Sallients .....	5	.07
Bronchiectasis .....	8	.11
Obliterated Costo-phrenic angle ..	4	.05
Adhesion of diaphragm .....	24	.32
Azygos Lobe .....	11	.15
Organized Pleural Effusion .....	2	.07
Cervical Rib .....	37	.45
Bifurcated Ribs .....	10	.13
Fusion of Ribs .....	8	.11
Poorly Developed Ribs .....	13	.17
Old Fracture or Spur of Ribs ....	4	.05
Spinal Curvature, including Potts Dis. ....	14	.19

The Anti-tuberculosis Society is now making plans for a similar survey sometime during the next school year in the other high schools throughout the state, if such a survey is approved by state and county officials. It is even hoped that a program can be effected which will include the xraying of the junior and senior grades in each high school throughout the state every two years.

## DELAWARE ESCAPES A SMALL-POX OUTBREAK

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In these days of increased interstate travel the danger of the spread of small-pox is very great. The fact that a non-immune person may be exposed to small-pox, and travel across the country before becoming ill, makes it very necessary that each suspicious case, especially in an adult, be carefully diagnosed. I think the following two cases illustrate this fact very well.

On November 4, 1942, Mrs. A. W. left Fredericksburg, Ohio, with her husband to visit Delaware and Pennsylvania. She arrived at Dover on November 5th, visited fourteen families in the vicinity of Dover between that date and November 10th, when she left Dover for Lancaster, Pennsylvania, arriving there in the evening of the same day.

Between November 10 and November 16, when she first complained of "feeling badly," she visited twenty-four homes, including three church services, besides a funeral, and a department store. From this time on until she left Pennsylvania to return to Ohio, she complained of "feeling badly" but kept on visiting.

During the period November 16 to November 27, when she left Pennsylvania, she visited twenty-one homes, which included two weddings, one funeral, and one wedding supper. She also visited a 5 and 10 cent store.

A letter from Dr. R. H. Markwith, Director of Health of Ohio, dated December 26, 1942, states: "We now have thirteen cases of small-pox in Ohio traceable to Mrs. W."

The Health Department of Delaware was in blissful ignorance of all this until Mrs. W. had returned to Ohio and secondary cases had developed from her.

On Tuesday, December 28, 1942, we received word from the Pennsylvania health authorities that Mrs. K. P. had been found to be suffering from small-pox, and that she had come from Delaware December 24th.

Mrs. P. is of the Amish faith, so we immediately went into the Amish community just west of Dover to ascertain where she had visited. We had little difficulty in finding

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the home which she made her headquarters while here, but great difficulty in finding all the homes she had visited during her stay.

Mrs. P. arrived in Delaware from Mifflin County, Pennsylvania, in the evening of December 17th on her wedding trip. In the course of the next few days we found thirty-two homes she had visited, and vaccinated every person in these families.

Beginning with her visits of December 22 every family she visited told us that she was not feeling well, and had to lie down a while. On December 24th she returned to Pennsylvania and on December 27th was diagnosed as having small-pox.

After a most diligent search, beginning December 28, we could get no history of any illness resembling small-pox following Mrs. W.'s visit, so our conclusion was that Mrs. W. got her infection before leaving Ohio, spent five days of her incubation period in Delaware and then went to Pennsylvania before coming down with the disease.

There had been no cases in the part of Pennsylvania where she visited until after her arrival. In due time secondary cases appeared, including Mrs. P.

#### COMMENTS

1. Practically all of the thirty-two families visited by Mrs. P. were relatives of hers.
2. She got to visit so many of her folks in a very short time, travelling by "horse and buggy," despite the fact that she was not feeling well.
3. Mrs. P. probably was infected with small-pox at her own wedding, took her wedding trip and returned home after becoming ill.
4. Notwithstanding the fact that Mrs. P. was in close contact with numerous susceptible persons after she was definitely unwell, none of these were infected. Possibly this indicates that small-pox is not very contagious three days before the eruption appears, as we are told by some authorities.
5. Both of these cases came to Delaware from other states, spent a large part of their incubation period here and went on to other states before coming down with small-pox.

6. Each of the thirty-two families was visited every other day until fourteen days had elapsed since their last exposure, and all those exposed after December 19, were quarantined.

#### HAS GONORRHEA BEEN DRIVEN UNDERGROUND?

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Despite the efforts of public health authorities to distract the attention of physicians and health officers from the problem of syphilis long enough to arouse some interest in the problem of gonorrhea, little has been accomplished along these lines. Venereal disease clinics in many states do not treat patients with gonorrhea. Where gonorrhea is treated the ratio of syphilis patients to gonorrhea patients is often as high as ten to one.

Syphilis, like an older sister, has always had more glamor than gonorrhea. The younger sister seldom gets the spotlight that it rightfully deserves. There is drama in the story of Ehrlich and arsenic. Intravenous injections have always had an objectiveness that urethral sounds and the multitudinous and assorted remedies for gonorrhea lacked. Even now the sulfa drugs, since they are given orally, command little respect and arouse slight fear in the taking. It behooves the medical profession and the public health authorities to break the siren spell which syphilis has cast over them and to allocate some thought to the problem of gonorrhea control before this infectious and highly communicable disease runs rampant in these times of war hysteria.

Usilton in peace times estimated that more than one million fresh cases of gonorrhea come under medical care each year. This is a conservative estimate. He also stated that at least five hundred thousand cases of gonorrhea were under medical care at all times. These figures, like the public debt of the early thirties, are now ancient history.

Today the United States cannot afford to have even five hundred thousand men and women, during the most productive years of

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their life, idle while they are undergoing treatment or enjoying a protracted convalescence from their duties that varies from weeks to months. The United States needs these man hours and these woman hours for the battle front, for industry, and for the home front.

The question naturally arises: "Where does the man or woman with gonorrhea go for treatment if he or she does not go to the private physician or to the venereal disease clinic?"

The possibilities to be considered are not too numerous. The patient may go to the family physician or the specialist, and receive adequate supervised treatment. Or resort may be had to a venereal disease clinic. Or the patient may remain untreated, subject to the whims of nature and the vicissitudes of natural immunity and susceptibility. Or, and this category is by far the largest, the patient may succumb to the temptation to remain anonymous (and infected) and rely upon the imponderable wisdom and the medical lore of the corner soda clerk or the pseudo-medico posing for the nonce as a pharmacist.

It is the self-treated case and the drug store habitue that deserves most of our consideration. The person who decides to depend upon nature, luck, or unsubstantiated faith, rather than upon men who spend more than one-third of their lives learning to care for the sick, can be reached by only two means. Approach may be made by common sense public health educational methods, or by sound epidemiological investigations based on contact tracing.

The drug store habitue can only be reached by making the drug store an inaccessible haven for his ignorant attempt to bury his head in the sands of avarice and ignorance. No ethical pharmacist now sells sulfa drugs to any customer without the prescription of a reputable physician. There is one sure way to prevent the unethical druggist from profiting at the expense of his honest cousin. The passage of a state law specifically prohibiting the sale of sulfa drugs without a physician's prescription and the implementing of such a law by adequate penalties and means of enforcement would wipe out, almost overnight, the present illicit traffic in sulfa drugs. Until

unethical druggists and quack physicians are forced out of the driver's seat and ethical physicians and pharmacists are again resealed, gonorrhea cannot be controlled.

To truly understand the complexity of the subject of gonorrhea control thought should be given to the mental and emotional reactions that occur in men and women, in boys and girls, who, for the first time, face the realization that they have become afflicted with a disease that their conscience tells them has resulted from an act which is labelled "sinful." At first fear predominates. It is an unreasonable fear that does not permit the weighing of consequences. "Disability" and "death" become vague terms in comparison to "detection" and "discovery." Blind instinct tells them to find someone who can help them without disclosing their anti-social behavior. That is why the corner drugstore with its friendly clerk, and the quack with his enticing anonymity, are so frequently resorted to. Little thought is given to the possibility of a "half cure," of a chronic infection that may light up after marriage, or of an infected marital partner. Youth, in the face of an unknown fear, seeks a temporary rather than a permanent sanctuary.

It becomes then both the duty and the responsibility of physicians and health officers not only to treat gonorrhea but to seek out and to find every early case of the disease. Every sterile mother or father, every case of blindness due to gonorrhea, every sufferer from a gonorrheal complication, presents a challenge to the medical profession to perfect its case-finding methods, its treatment regime, and its diagnostic procedures, so that such failures may not be repeated.

Some members of the medical profession and some health officers have been loath to understand the role of the public health nurse in investigating contacts of venereal disease cases. It is so easy to dismiss the victim of a venereal disease with the trite statement "sin is its own reward," forgetting entirely that the medical profession can only be interested in the curing and the preventing of all preventable diseases. The public health nurse has a medical awareness plus a knowledge of public health consequences that places her in the unique position of being at once the physi-



cians' assistant and the patient's friend. She is a woman, and therefore the logical friend of the sick persons. She has been trained in the rigorous school of medicine to the point where her feminine instincts have been sufficiently subjected to discipline to make her amenable to orders. She can be relied upon by the physicians and the health officer to find the contact with gonorrhea and to follow faithfully all instructions that are given to her. The fact that she is a public servant makes her all the more accessible to the private physician who wishes to unearth and treat patients with diseases that are dangerous to the health of the entire community. She should be the first one to be called upon rather than the last.

Not only the public health nurse but the health officer as well should be consulted frequently by private physicians if an effective fight against gonorrhea is to be waged. The path between the physician's office and the health department is notoriously overgrown with weeds. Many of the legal problems posed by stubborn and uncooperative infectious venereal disease patients can be solved by the health officer and his staff, leaving the actual medical supervision of the case in the hands of the attending physician. The health officer, too, is dependent upon the private physician for assistance. Unless new cases of gonorrhea are promptly reported to the health department there can be no intelligent planning of an anti-gonorrhea campaign. It is not only essential that the health officer know the number of cases of gonorrhea occurring in the community, but he should also be furnished with other pertinent information concerning each case in order to obliterate social conditions that are conducive to the spread of the disease.

At times a professional rivalry develops between private physicians and the health department staff. When carried beyond the professional stage the results are always disastrous to the public. It would be as unprofessional for a physician to spurn the assistance of the health department (or vice versa) because of a personal or professional prejudice as it would be for him to refuse to give diphtheria anti-toxin to a child whose father was of an opposite political faith. Under-

standing and mutual cooperation which permits friendly and constructive criticism can be the means of developing an entente between private physicians and the health department that will greatly accelerate the program for controlling gonorrhea.

In determining how important any infectious disease is in a community two factors must be considered, namely, incidence and morbidity. Although a single case of gonorrhea is undoubtedly less serious than a single case of syphilis, gonorrhea as a community disease assumes greater importance because of its greater incidence. Repeated infections are not unusual with gonorrhea, whereas the syphilitic patient is rarely reinfectd. The morbidity and time loss from reinfection with gonorrhea is just as great as that caused by initial attacks. Whether the gonococcus has a greater invasive power than the spirochaeta pallida or whether there exists a greater susceptibility to gonorrhea than to syphilis had not been definitely determined, but the fact remains that many more people contract gonorrhea every year than they do syphilis.

Another obstacle to the full control of gonorrhea is the difficulty in determining when a cure has been effected and whether or not an apparently cured patient has instead become a chronic carrier of the disease. Recently the institution of gonococcal culture services in state health departments has revealed that smears alone disclose a relative few number of cases of gonorrhea in comparison with the number of cases diagnosed after repeated cultures have been made. In the absence of a gonococcal culture service it is wiser to make the diagnosis of gonorrhea clinically, basing judgment on the presence of a purulent urethral or cervical discharge and a positive history of exposure, than to bend over backwards awaiting bacteriological confirmation, meanwhile allowing an infectious gonorrhea patient to spread the disease among his consorts. If gonorrhea is to be controlled every case must be found quickly and treated immediately.

If gonorrhea were an upper respiratory disease or a disease of the digestive tract, in fact anything but a disease contracted through sexual intercourse, headlines would flaunt the failure of the medical profession

and the public health authorities to stop its spread. Its morbidity, the time loss it causes, the expense which treatment entails, the medical services which are absorbed in treating it, all these factors would promote a prompt, energetic, and realistic fight, to the finish against it. Instead, gonorrhea hides behind prudish and emotional prejudice. In hiding, it is at its worst. The time is swiftly coming when no infectious and communicable disease, even a venereal disease, will be permitted to spread practically unmolested through the general population. This time will come the quicker if every physician will enlist in the battle to find gonorrhea, to bring about the investigation of every contact, and to treat every patient until he is no longer infectious.

A sound program for the control of the spread of gonorrhea can only be developed when private physicians, health officers, officers of the law, civic leaders, and the public realize that the price which is exacted annually by gonorrhea is needless, and decide to pool their several abilities in order to drive gonorrhea out into the open and there to destroy it.

#### THE FOUR P<sub>s</sub>—THE PUBLIC, POLLUTION, PLANNING, AND POST-WAR RECONSTRUCTION

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Back in 1791 when Alexander Hamilton made his report on the manufacturers, the question of the pollution of our streams was not a very pressing problem, at least from the point of view of those who were attempting to make the new nation a going concern. One of our English friends, however, who happened to be travelling in this country did refer to the highly objectionable character of the harbor of the city of Philadelphia, then a city of about 60,000 population. The problems of stream control are becoming as intricate as any phase of modern government, and this Englishman, undoubtedly, would feel at a loss trying to figure out the solution of the pollution problem in the present city of Philadelphia. On the other hand, the present day Englishman could probably tell us a lot about the control of water sheds, as they have

had many years' experience trying to solve these industrial and domestic waste problems by river-sheds rather than by some general or blanket law passed without any reference to the many varied factors that are bound to enter into the solution of such problems, certainly when you consider an area as varying as these United States.

Past history in this country has indicated that many factors enter into the control of pollution, and one of these is not necessarily whether you have a strong anti-pollution law or not. Many of the states in this country have accomplished as much without drastic laws as those with very severe laws. Many people are discouraged by the progress which is being made by the various states. However, even this slow progress is much better than obeying the clamor of certain groups to pass a Federal law in which certain standards would be set up in a hopeless attempt to solve a many-sided problem. On the other hand, in reviewing the past decade, there is no question but that Federal funds and not laws have given a decided impetus to pollution control. One would venture to predict also that the last has not been heard of this assistance on the part of the Federal government in helping to solve certain problems which affect many people in areas completely removed from the state in which the pollution originates. Unfortunately, fecal matter does not recognize state boundary lines as it travels downstream in a vain attempt to reach some body of water where ample dispersion would be found.

The immensity of the problem of stream pollution can be visualized when we consider that 68,000,000 people in the urban centers of the United States are directly connected with sewers and approximately 40,000,000 people dump sewage without treatment directly into our streams. Seven industrial states account for over twenty-five million of these people. Concentrated effort in these seven states would eliminate over half the pollution problem in these United States.

In addition to the problems noted above, there is also the difficult problem of taking care of the waste from industries which may be located outside of corporate areas but which discharge waste into streams and which

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are detrimental to communities downstream, especially those communities which must take water from the stream for drinking purposes with or without complete treatment.

With the beginnings of the movement to establish Inter-state Commissions on Cooperation by the various states throughout the union, one of the first problems tackled by the four Commissions bordering on the Delaware river was the formation of the Interstate Commission on the Delaware River Basin and which had as its program the control of pollution of this same river. The Delaware River Basin is an area somewhat larger than Belgium and is very densely populated in certain sections. The reduction of pollution of the Delaware river is of concern to the cities within the basin, to the War and Navy Departments, to industry of all types, and finally to the fish and oyster industry. The decided drop in production by the oyster industry of this state within the last few years is a vivid illustration of the need for clean waters, and it is a problem which the legislature has just recently recognized and through a new commission, hopes to revive what was once a very profitable industry.

One of the first problems of the Interstate Commission on the Delaware River Basin was to sell the general idea of a four state cooperative agency to the public and to let the people of the basin know that an administrative agency created by the four states was to act as a continuing body, dealing entirely with problems concerned with the whole basin, not only from the standpoint of pollution, but with other factors such as water supply diversion, recreational needs, and conservation.

The first problem in the basin, insofar as pollution is concerned, was to establish zones for the whole water-shed and this was done by the Committee on Quality in 1938 which was made up of the Chief Engineers of the State Board of Health of the four states of New York, New Jersey, Pennsylvania and Delaware. The Delaware River, from the headwaters to the Delaware Bay, is divided into four zones and certain standards were set up for each zone. Naturally the zones closest to the headwaters were to be kept as pure as possible and any one who has motored on

Pennsylvania Highway No. 611 which winds through the Delaware Water Gap will agree that such a stream should be kept as clean as it has been for hundreds of years. As we come further downstream other problems arise, especially when we encounter large municipalities such as Trenton, Camden, Philadelphia, and Wilmington.

The several zones may be described briefly as follows: Zone No. 1 extends from the headwaters of the Delaware down to Trenton, New Jersey, and the chief uses of the river are to be for recreation, bathing and fish life. Zone No. 2 extends from Trenton to a line drawn perpendicular to Pennypacker Creek in Philadelphia and to a comparable point in New Jersey, and is to be restored to condition where the water after treatment could be used for drinking purposes by the inhabitants of that section of the river, and also for recreation, navigation and fishing. Zone No. 3 extends from Pennypacker Creek to the Pennsylvania-Delaware boundary line and is to be restored to that condition where the water would serve for industrial water supplies, navigation and other uses. Zone No. 4 extends from the Pennsylvania-Delaware boundary line to the Atlantic Ocean. A portion of this is to be used for industrial water supplies and the remainder for commercial fishing, fish and oyster culture, and other uses.

Detailed minimum standards of purity for effluents of sewage treatment plants to be discharged into these various zones were also set up. The same standards in each zone apply to the tributaries as well as to the main river. This latter was done to enable the uniform correction of pollution in the whole water shed. The standards of purity and the time schedule set for the completion of the sewage treatment plants in the various towns located on the water shed have been adopted by three of the four states as a reciprocal agreement. Pennsylvania is the one state which has not agreed to the proposed standards and time schedule.

The amount of sewage being discharged into the Delaware River is estimated to be approximately one-half billion gallons daily. This estimate includes industrial and domestic



wastes, and approximately two-thirds of all the wastes, both industrial and municipal, is discharged untreated into the river. Pennsylvania contributes approximately 75%, New Jersey about 20% and New York and Delaware combined 5%. One does not have to scrutinize the basin very thoroughly before he knows immediately where the real work must be done to make a real showing in the attempt to clean up the Delaware river. This is the area which includes Camden, Philadelphia, Chester and Wilmington. Of this group Chester is the only municipality that has installed primary treatment and has kept to the schedule set up by the several states. Incidentally, the suburban territory surrounding Chester has also constructed intercepting sewers and treatment plants. Whether the fact that the Chairman of the Commission lives in Chester has been the main reason why this area has gone ahead one cannot say, but the members of the Commission take it as a tribute to the Chairman.

One of the other problems facing the people in the water-shed is the extent to which water is being diverted from the Delaware River Basin. The Commission has given considerable thought to this problem and it is a problem that will become more acute as the years go by.

At the present time the city of New York is appropriating 450,000,000 gallons daily from the Delaware and its tributaries and this same water is being taken from this watershed and discharged into the Atlantic Ocean. The city of Newark is now negotiating for 400,000,000 gallons which would further deplete the fresh water in the Delaware. What has this to do with the communities downstream? The seriousness of the problem is due to the fact that the salt water is reaching farther up stream, to such an extent that industries in and around Chester are noticing the rise in the salt content of the water and consequently are now faced with the prospect of having to go to inland sources to impound fresh water for industrial purposes. To date no one has evolved a satisfactory method of removing salt from water, at least economically.

Another important factor is that the further this salt invasion moves northward up-

stream the greater the chances are that the underground water stratum will be affected. This stratum is tapped by wells which in turn are the sole source of drinking water supplies for Delaware and New Jersey communities. In the case of the city of New Castle the salt content has risen from approximately 40 ppm to 1400 ppm within the last few years. A part of this increase may be due to a combination of factors but the extensive report made on the "Salinity Invasion of the Delaware River" by the War Department would tend to corroborate the viewpoint that the diversion of fresh water from the Delaware River Basin is an extremely important factor.

The Commission has devoted most of its efforts to encouraging the communities along the basin to take advantage of the Federal funds in the construction of intercepting sewers and sewage treatment plants. Up until the priority situation interfered with the construction of sewage plants some \$10,000,000 have been spent by the various municipalities of this area, and the sewage of some 200,000 people taken care of. In addition, the city of Philadelphia was just about to embark upon the construction of a \$42,000,000 sewage collection and treatment program. The city of Camden and the city of Gloucester, just across from Philadelphia, were under orders to construct plants for the treatment of their wastes. According to the time schedule set up and agreed to by three states Gloucester was to have constructed its sewage treatment plant by January 1, 1940, Camden 80% completion by January 1, 1943, and the same for Philadelphia. Various factors have interfered with this program and as far as certain cities are concerned they have fallen behind the time schedule.

The background given above brings us down to the relationship of the state of Delaware to this program. The municipalities in Zone No. 4 which were listed in the time schedule consist of four in Delaware and one in New Jersey, namely, Salem, which was to construct a primary treatment plant by January 1, 1940; Wilmington by January 1, 1943, and New Castle, Bellefonte and Delaware City by January, 1945.

It is important that these towns and cities, particularly Wilmington, draw the necessary

plans for the installation of the interceptor sewers and to begin to select sites for the pumping stations and sewage treatment plants and to iron out the legal difficulties inherent in such a program. Many communities throughout the United States are using this opportunity to get plans and proposals ready so that they will be ready to go ahead when the public works programs are resumed.

At the present time all the sewage of the city of Wilmington, with the exception of sewage of some 5,000 people which is now taken care of in the Shellpot Creek plant, is discharged untreated into the Brandywine Creek and Christiana River.

Forehandedness in preparing for a future public works program would not be regretted by the municipal authorities of New Castle, Bellefonte and Delaware City. The problem of Bellefonte would probably be tied in with certain other communities adjacent to and bordering on the Delaware River. This should be a joint problem of the town of Bellefonte and the Levy Court of New Castle County.

Glancing over the costs of the sewage treatment plants, interceptor sewers and pumping stations of the many communities on either side of the Delaware River which within the last five or six years have constructed sewage treatment plants it is interesting to compare these costs with the expenditures now made for certain pieces of war equipment. The cost of one-fifth of a submarine would collect all of the sewage from the city of Wilmington and provide pumping stations and primary treatment. The cost of one pursuit plane would provide an ample sewage treatment plant for the town of New Castle and the cost of one 60-ton tank would solve the problems of both Delaware City and Bellefonte.

As we move out of the immediate shores of the Delaware River we come to other sanitation problems which pertain to our local unincorporated areas as well as the incorporated areas. Coincident with the construction of sewage treatment plants by towns such as New Castle and Delaware City, as well as Wilmington, would be that of Newport which contributes untreated sewage directly to the Christiana river. Other projects crying for

a solution and on a much larger scale than heretofore considered by authorities in question are the provisions of sewers for the areas immediately adjacent to the northern boundary line of Wilmington and thence northward to the state boundary line. South of Wilmington a comprehensive sewerage plan for some of the ill-advised real estate developments should be considered. The areas to be considered are the Wilmington Manor section, Minquadales, Rose Hill, and surrounding territory. Such improvements should not be made without the county authorities taking the initiative in seeking low cost capital funds so that these improvements can be carried over a period of years and as the whole area develops each new development will help to carry its share of the burden. As the Federal government has helped to alleviate certain problems which have both Federal and states interests, the county should also consider assisting those areas which are too dispersed to be considered as civil units by themselves. Scores of counties are doing this same work throughout the United States and some of the largest projects constructed during the last decade were done by these same groups. With the cleaning up of certain of the streams through an expanded public works program the time arrives for industry to give consideration to the treatment of its wastes, and this applies particularly to the tributaries of the Christiana as well as other streams throughout the state.

As we come down the state we find other communities where the sewage is still discharged raw into the most convenient water course. The towns which should now be considering taking wastes out of streams and should be preparing the necessary plans to be in readiness for a public works program are Seaford, Laurel and Lewes. Such treatment plants would consist of primary treatment tanks which would settle out the heavier solids, with the overflows or effluents chlorinated before discharge into the streams. The towns and cities that might be considering secondary treatment, and particularly to assist further in the cleaning up of certain streams which effect oyster culturing, are the cities of Dover and Milford.

The towns that have considered sewerage

systems where none exist at the present time are Milton and Millsboro, the former having prepared preliminary plans. Frankford and Selbyville are also communities that might be giving consideration to the preparation of preliminary plans for a complete sewerage system. In addition to the areas suggested above, many of the communities need to consider the extension of sewers to reach areas which do not now have the benefit of modern sanitation. By the time a concerted effort is made to re-establish a public works program three to five years will have passed and the need for servicing these new areas will become all the more evident.

Many of the communities throughout the state could consider further conditioning of their water supplies through such methods as water softening, the removal of iron or the removal of carbon dioxide and its correction with lime treatment. Some of the towns and cities which might consider water softening are: Dover, hardness 127 ppm; Georgetown, 149 ppm; Lewes, 119 ppm; and Townsend, 198 ppm. Cities that have a high iron content and would be greatly improved by the installation of an iron removal plant are: Bridgeville, iron content 3.7 ppm; Delaware City, 7.4 ppm; Delmar, 3.2 ppm; Frederica, 3.4 ppm; Laurel, 3.4 ppm; Lewes, 6.9 ppm; New Castle, 4.4 ppm; Seaford, 3.9 ppm; Townsend, 6.4 ppm; and in addition the area comprising Richardson Park, supplied by the Artesian Water Company, is also in need of iron removal. Many of our supplies have a high acidity due to the carbon dioxide gas present. This can be removed by aeration and correction with lime. The towns having supplies with high carbon dioxide content are: Delaware City, 71 ppm; Smyrna, 39 ppm; Clayton, 24 ppm; Harrington, 47 ppm; Bridgeville, 20 ppm; Seaford, 46 ppm; Delmar, 48 ppm; Laurel, 34 ppm; Millsboro, 16 ppm; Camden-Wyoming, 24 ppm; Milton, 26 ppm; Lewes, 50 ppm.

Today we can demonstrate that hard waters consume a disproportionate amount of costly soaps, that waters high in iron discolor and shorten the life of clothes, and that waters high in carbon dioxide cost money in terms of plumbers' bills as well as a disintegration of the whole plumbing system. Today more

and more people are demanding that water supplies keep pace with other modern improvements. A satisfactory water supply shall be clear, colorless, odorless, with an iron not exceeding 0.3 ppm and a carbon dioxide content of not over 10 ppm.

An attempt has been made in this survey of sanitary requirements to indicate the need for such improvements and further to stress the need to be prepared to take part in the huge problem of demobilization. Today one senses that all the major groups of opinions are convinced that not only industry but that municipalities, counties, states, and the Federal government must necessarily join in planning to take cognizance of the problem created by changing over to peace time pursuits twenty million men and women who have heretofore been actively engaged in supplying eight to ten million other men and women throughout this world with the necessities of war. Just as the magnificent bomber of today has permitted man to see the whole world from a different plane so today must men and statesmen look at today's problems from a vantage point far removed from that even of the last post-war period. Log cabin thinking necessarily must be air-conditioned to struggle with the problems created by the magnificent efforts made by industry which has accomplished an unbelievable achievement in the short space of two or three years. During this time a great majority of these industries have completely retooled their plants and have turned out such a supply of products for the purpose of overwhelming the Axis powers that even yet the average American has not visualized this tremendous increase in the tempo of modern industry, despite the tools of the motion picture and the radio. That each civil division, in addition to industry, must do its duty to re-employ the men who are returning from the armed forces and from the factories is not the opinion today of one group but of practically all groups throughout the English-speaking world. War, despite all of its horrors, has caused technological development to burst forth full bloom in the short space of a few years and has placed in our laps problems which even the staunchest of our founding fathers might well have recoiled from.



One of the basic problems, as I see it, is to raise the mental horizon of our citizenry to a point where they can visualize a physical environment to match the incomparable beauty of the bomber soaring through the atmosphere. Sanitarians must prepare to help in the educational work necessary in the movement to clean up our valleys, our rural communities, and our cities. This means satisfactory water supplies, the proper treatment of municipal wastes and other population groups, and the proper housing of all citizens. It is going to cost, it is going to hurt, but a nation which can underwrite in three or four years a comparatively new method of transportation such as the airplane when that same nation took nearly two generations to underwrite a former method of transportation can, I believe, wipe out the ugliness of portions of our cities, the bareness of our countrysides and all those aspects of our physical environment that do not match the civilization which the grace of the bomber and its brother portends. The swiftness of the plane is perhaps the harbinger of the speed of the economic collapse which we face unless we think quickly and broadly enough about those problems. Solving these we can call ourselves citizens of that world those nineteen and twenty-year-old boys are seeing from the clouds as they fight our battles for us. Let us, therefore, so plan our post-war reconstruction problems that man will not be tempted to solve these by the use of the magnificent planes which are daily bringing these very problems closer to your door-step and mine. Let all of us get ready for the impending shock from the smallest crossroads and the smallest business unit to the largest civil and industrial units in our state and nation.

### THE SEASONAL INCIDENCE OF BIRTHS

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Dover, Del.

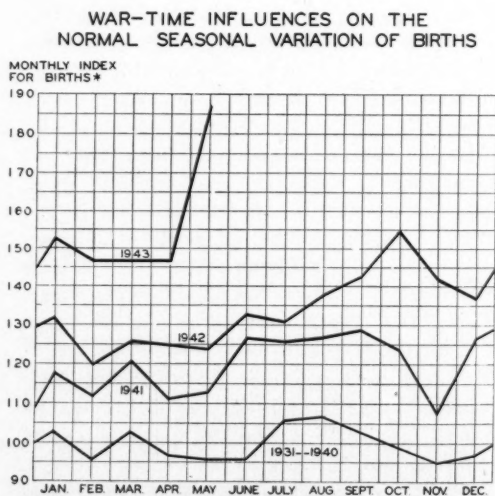
Conditions of extensive employment coupled with future uncertainty for a great number of people, universally prevalent during these times, has produced social tendencies which practically go unharnessed from peace time influences. The order of the day, in part, is a state of mind as a result of war time

influences, which, no doubt, is nowhere more in evidence than at marriage bureaus. People are now marrying and some establishing families, in a great number of instances under conditions not even remotely contemplated during peace-time days.

In Delaware, which is an adequate sample of national tendencies, we find that the marriage rate has gone from an annual rate of 6.0 per 1,000 population in 1938 to 30.0 per 1,000 at the present time.

In figures there has been an increase from 1,586 marriages in Delaware in 1938 to a contemplated 8,000 in 1943. This increase is beneficially reflected in the birth rate as would be expected, and is resulting in an increase of Delaware civilian population, considering the losses sustained from men leaving for the armed services.

For the month of May, 1943, the latest month for which complete figures are available, Delaware had more births than any month during which records are on file in the Division of Vital Statistics. The increase for this month is very pronounced as can be observed from the following chart. For the



\* BIRTHS IN SPECIFIED MONTH AS PERCENT OF THE MONTHLY AVERAGE FOR THE TEN YEARS 1931 TO 1940 INCLUSIVE.

current year a conservative prediction may be that the peak of births will be reached some time this fall. It is expected to be over and above anything that we have heretofore ex-

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perienced. The lower curve is based on ten years experience of baby records and it is a very accurate picture of the seasonal trend. During normal years there is a minor peak in March with a major increase during the months of July, August and September, the peak month being August. This curve very closely coincides with the annual curve of the United States, where from two to two-and-a-half million births are involved. For the years 1941, 1942 and 1943, where a decided increase from the norm is noted, we can still see some adherence to the seasonal trend; however, the bulge of increase in the fall of these years is spread over a greater span of time. The trends here noted are twofold—one the constant increase, the other the seasonal incidence.

In connection with the seasonal cycle of births we may well be fortunate in its mode of operation. The seasonal peak of summer is the best time for babies to be born as well as being the time when most babies are born.

When rates are computed from the tables of selected causes of infant mortality from the Federal Report of Vital Statistics, 1940, the latest year for which figures are available, we find for the quarter of the year, July, August and September, the infant mortality is the lowest of any quarter; it is 20% lower than the first or last quarters of the year and approximately 10% lower than the spring quarter. This is in part, no doubt, due to the trying effects of adverse weather on the pregnant mother, as rates from prenatal cases are found to be highest during the winter months. The causes here referred to are premature births, congenital malformations, and congenital debility. The highest rates for congenital malformations are during the period November on through March.

The situation in regard to gastrointestinal diseases is somewhat different, as the rates for these are highest during the warm months. Considering this group alone, October and November would be better months for birth of babies who would then have some time with which to develop bodily resistance for the following summer. Of this group of diseases, diarrhea and enteritis is the most important; however, this cause has become one of the lesser hazards to the modern infant.

The very important diseases for the winter baby to avoid are those of the respiratory group, namely, pneumonia and influenza, the mortality rates from which are during the cold season approximately three times as great as during the other months of the year.

The national curve of infant mortality, exclusive of stillbirths, runs to its lowest point during the month of August, the month when most babies are born.

The monthly incidence of death from stillbirth causes also is shown somewhat to be higher during winter and spring than during the summer and fall months, although the difference here indicated is not too pronounced.

We find from a study of mortality from selected causes that the infant who begins his life during the time when most of them do has a better chance to weather the hazards of survival; first, because during that time the forces involved in producing mortality from prenatal causes are least active, as well as those of the respiratory group of diseases—the two groups that dominate the infant mortality picture; second, because those born during these months have more time to develop constitutional resistance for combating the dangers to early infancy.

#### **MATERNITY AND INFANT CARE FOR WIVES AND INFANTS OF ENLISTED MEN IN THE ARMED FORCES**

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Congress has appropriated funds to pay for the costs of the maternity care for wives of enlisted men and for sick care for their infants under one year. The U. S. Children's Bureau has been asked to supervise the program as administered by the Maternal and Child Health Divisions of the State Health Departments. As of August 1, 1943, forty-two states, including the state of Delaware, were participating in the plan and two additional states had completed their tentative plans and submitted them to the Children's Bureau for approval. The plans in all the states are similar as they are all designed to follow a basic pattern supplied by the U. S. Children's Bureau. This is necessary because

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the plan is nation-wide in scope and no one state should receive greater concessions than any other.

#### WHO IS ELIGIBLE?

The plan was designed to assist the families of enlisted men whose basic pay was \$78.00 a month or less (men in the fourth to seventh grades) or the families of enlisted men in the first three grades where circumstances make it difficult for sufficient funds to be collected to pay for such care without causing the family some hardship. This latter group must attach a signed statement of need to the application form.

Although many of the enlisted men may have had good salaries prior to entering the Army, Navy, Coast Guard or Marines, most of them were not old enough and working long enough to have accumulated much money and many are attempting to continue small life insurance or building and loan payments so that they will not have to sacrifice the funds they have invested. Others find this impossible.

The emergency plan in time of need is small recompense for the sacrifices the men and their families are making, but it has helped ease the anxiety of many a man who was separated from his wife and many a woman who had to go through pregnancy and childbirth or the serious illness of her child without the consolation of her husband's presence.

Since common-law marriage is not recognized in Delaware, only women who are legally married to enlisted men are eligible for maternity care. However, illegitimate children are eligible for care provided the father signs a statement acknowledging paternity.

#### HOW TO APPLY

Physicians may obtain application forms for maternity care and for sick infant care from any one of the County Health Units or from the MCH Division of the State Board of Health in Dover. They are also available at American Red Cross Chapters, U. S. O.'s, Army posts, coast guard stations, welfare agencies, and hospitals.

The wife fills out the face of the application including the husband's serial number; the physician fills out the reverse side. In so

doing he agrees not to request or accept any payment from the patient or her family for these services. In other words, the fees paid by the State Board of Health cannot be used as part payment toward a larger fee but must constitute the entire fee. If this were not so, the whole purpose of the plan would be frustrated. If patients have sufficient money to pay for expensive obstetrical care they do not need the assistance of the emergency plan. The same applies to hospital care.

If the physician is unwilling to deliver a patient for the fee provided by the plan, (i. e., \$10.00 for prenatal care—a minimum of five visits, and \$25.00 for delivery, postpartum care and six weeks' postpartum examination) there can be no other services authorized under the plan. When a physician does not wish to participate in the plan but believes the patient should receive the benefits of the plan he can either refer the patient to another physician who is participating or to a participating hospital where she can receive prenatal care and be delivered by a member of the resident staff.

In special cases Army Emergency Relief or Navy Relief may give some assistance when patients are not eligible for care under the Emergency Plan. To avoid duplication of effort and to be sure all patients are receiving all the care necessary, a clearing house for the reporting of all patients receiving this type of care has been established in Delaware.

Since authorization for payment for care cannot be retroactive beyond 24 hours for maternity patients and 5 to 6 days for sick infants, it is very important that applications be sent in promptly. All care prior to that time will have to be paid for by the patient or donated by the physician. This ruling, while it may cause some hardship before the plan is well understood, will cause no difficulty at all when physicians and hospital admitting rooms routinely ask each maternity patient whether she is eligible for care and fill out and mail applications promptly. This has an added advantage to both the physician and the hospital, long before the patient leaves the hospital they know whether payment for care has been authorized.



### WHAT SERVICES ARE AVAILABLE TO THE PATIENT

The emergency plan provides prenatal care by the physician of choice; antepartum nursing instruction by State Board of Health nurses; delivery, postpartum care and six weeks' postpartum examination by the physician of choice; hospitalization; or if a home delivery, delivery nursing service and daily postpartum bedside nursing visits as long as the patient remains in bed at home, up to the fourteenth day. (For a description of the nursing service, see Miss Alberta Wilson's paper in this issue.) Complications of the prenatal period and for six weeks' postpartum are also cared for under the plan.

For sick infants under one year, physician's home or office visits are authorized and hospitalization for a maximum period of three weeks when necessary. When additional care is necessary a second application should be sent to the State Board of Health explaining the need for additional services.

Health supervision for the infants is supplied in the Well Child Conferences of the State Board of Health.

### HOW PAYMENTS ARE MADE

Physician's Invoice forms are supplied upon which the physician states the services rendered. This invoice must be accompanied by an Emergency Plan medical record form giving data upon all the services for which the physician is to be paid—i. e. if the application was made too late for payment for prenatal care, this portion of the record need not be filled out. The delivery fee includes the six weeks' postpartum examination and this examination must be completed before the invoice is sent in. When the delivery is performed by a member of the resident staff of a hospital, he fills out a medical record form which is to be included with the hospital invoice form.

Occasionally women who have had care authorized in Delaware move to another state. When this occurs, if the physician will send a record of the services he rendered between the time care was authorized and the patient departed, he will be reimbursed for these ser-

vices at the rate of \$4.00 for the initial visit which includes the physical examination and pelvic measurements, and \$1.50 a visit for the follow-up visits.

This same rate is used in paying for prenatal visits when the patient has come to the physician too late for five prenatal visits at least a week apart or when the application has been made too late in pregnancy for other reasons.

### DATA ON THE PLAN IN DELAWARE

The Delaware Emergency Plan was approved by the U. S. Children's Bureau April 29, 1943. Notices were sent to all physicians by May 10, 1943. During the remaining days in May, 34 authorizations for care were made; in June, 80 authorizations; in July, 74; and for the first ten days in August, 12; or a total of 200 authorizations in three months.

58 physicians have participated in the plan to date, and 5 of the 7 hospitals in the state. Another of the hospitals is planning to participate soon.

Of the 200 authorizations, 194 were for maternity care and 6 for the care of sick infants. 130 of the women for whom care was authorized were Delawareans whose husbands were in camps in this country, 23 had husbands overseas, 41 authorizations were for women who had come to Delaware to be with their husbands who were stationed here.

In 1942 there were 5,472 births in the state, including 254 non-resident births. During 1943 the number will probably be at least 500 births a month if the present rate of births continues.

It has been estimated that for the country as a whole 5% of the births would be in the group eligible for emergency care. Using this rate in Delaware the number would be approximately 300. It appears that this estimate will be quite low for Delaware since we have made 194 authorizations for maternity care in the first three months' period.

Some indication of the magnitude of this program can be obtained from the federal report as of June 30, 1943. A total of 28,005 authorizations for care had been made throughout the country up to that date; one state health department authorizing care for as many as 1,106 patients a month.

## THE ROLE OF HEALTH EDUCATION IN A PUBLIC HEALTH PROGRAM

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Dover, Del.

A health education program in wartime should, first of all, inspire the state's citizens with a desire to keep well, and second, give them ideas on how to do it and how to cooperate with doctors and other agencies striving for the same goal. It should lead the way in forming public opinion which will back up the health programs now being carried on in the state, whether it be the State Board of Health's own work or that of other groups like the state's Safety Council, Anti-tuberculosis Society, Women's Field Army for the Control of Cancer, and others.

The public health department knows the health problems of a community, the health facts and the health resources and is, therefore, in a position to make a fundamental contribution to any health education program.

Health officers throughout the country are presenting their health education programs to the people by the means of a sympathetic press, helpful radio, exhibits, and window displays, as well as through clinics and nursing services. They realize that an intelligent, well-informed public is more sympathetic toward, and cooperative with, activities which contribute to more healthful community living.

One function of a Division of Public Health Information is to aid and promote both national and state movements already begun such as: canning for school lunch programs, for better nutrition and to save the foodstuffs; safety for school children; tuberculosis and cancer control by means of early diagnosis; recruitment of high school and college girls for nursing careers; use of schools as recreation centers for youth; health projects for club women, National Negro Health Week; and other programs that directly, or indirectly, affect the health of the state.

What can be done in an intensified campaign of health education has been demonstrated by the public's response to vaccination for smallpox and immunization against diph-

theria, which are now becoming accepted health measures and a part of school routine.

Hot lunches for school children is another health program which has received impetus through public health education. These lunches are being served in many schools, often through community cooperation.

The State Board of Health stands today as the one agency in Delaware trying to do a wholesale job in many fields of health education. Advice of physicians to their patients, of health teaching in the schools, education by special organizations on specific disease or on safety—each of these is working with a particular group or on a specific health or safety problem in the state. But this is not enough.

### LESS DOCTORS—MORE HEALTH EDUCATION NEEDS

It is taken for granted that, as the war progresses, more and more doctors and nurses will be required to serve with the armed forces, placing an increasingly heavy burden upon the physicians and nurses left at home to care for the civilian population. The Bureau of the Census estimates 275,478 persons as Delaware's population for 1942, and men and women from other states continue to pour into the industrial areas here. About 216 licensed physicians are left in the state, or an average of one doctor to over 1,200 people. In some rural areas there are even fewer than the state average. The Army has asked for an additional 10,000 doctors in this country to enter war service by New Year's Day. A hundred more nurses from Delaware are requested this year by the Army and Navy before the end of this year to fill the state's quota for 1943.

Babies will continue to arrive, accidents and disease to occur.

Is the burden to become too heavy to be borne by the physicians left in Delaware?

Are the people to suffer because there are not enough doctors to care for their ills?

Colleges and hospitals cannot turn out new personnel fast enough to cover all the medical and nursing needs of the state adequately, and the same problem is acute all over the country.

What, then, is the answer?

One at least partial reply is preventive medicine by means of health education. It

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people—from school children to grandparents—can be trained to think of their own individual health and safety as a direct and positive contribution to the war effort, there will be less of the avoidable illnesses and accidents, thus giving doctors and nurses more time to devote to maternity patients, infants, and the serious cases of disease and accidents.

#### HEALTH NO LONGER INDIVIDUAL MATTER

Heretofore health has been an individual matter. Now, if people can be made to feel that by keeping well they are making a direct contribution to the war effort, and, equally, that by being careless of their health or safety they slow up the war effort—then we should have a really powerful motive for the individual to preserve his own well-being. Certainly it is a stronger incentive than the pre-war one of health for health's sake of the individual—which seldom appealed to children and often was equally unimpressive to their elders.

A program of aiding "Victory Through Health," carried on in the schools and other public places, might well serve to awaken Delawareans to an interest in all phases of their health, from physical check-ups to eating the right foods.

"Have a Physical Check-up on Your Birthday" is an idea that could be advocated in this state with good results. It would help people to have early diagnosis and treatment of such diseases as tuberculosis, cancer, heart disease, and syphilis before their condition became serious, should their family physician find that they had any one of these, or other ailments.

Both doctors and public health personnel have long talked about early treatment leading to early cure, or at least to the arresting of many diseases, but far too many people must be slowed up or incapacitated before they will seek their doctor's advice. This means, of course, that not only are they a loss to war production or other useful labor at a time when man and woman power is so sorely needed, but that they require more of the practicing physician's and nurse's time trying to rehabilitate them than would have been needed for early treatment.

Doctors in good standing do not, of course,

advertise but the State Board of Health can, through newspaper stories and posters, working in schools and in organized groups, do health education work to popularize such ideas as "Victory Through Health," the importance of KEEPING well, and "Have a Physical Check-up For Your Birthday." Suggesting a physical examination on the person's birthday by the family doctor would serve the three-fold purpose of urging him to do the job on a specific date rather than just giving him a vague admonition; it would stagger the check-ups through the year so that the physicians would not be overwhelmed with examinations at any one time; and it would lead to the much-to-be-desired early diagnosis and treatment.

The Delaware Academy of Medicine in Wilmington made a step in the direction of general public health education last spring when it held two forums open to the public, where medical matters were discussed and where lay people could ask questions of a panel of physicians. These forums, it was announced, would continue this fall. They have proved successful in other cities and furnish a rare opportunity for the public to obtain the latest medical thought on many subjects.

But busy doctors these days have little time for general health teaching, so, both to save their precious hours and skills for the seriously ill, and to help keep well people well, the Division of Public Health Information of the State Board of Health advises the public on health matters of seasonal importance from sunburn to colds, from watching out for ticks since they may be the carriers of Rocky Mountain spotted fever, to diarrhea being dangerous to babies, and that pneumonia is a medical emergency. Always the State Board of Health urges persons to seek the aid of their family physician at the beginning of any illness.

#### MOTION PICTURES AS A TEACHING MEDIUM

Motion pictures are now gaining popularity as a means of health education. Their increasing importance is shown by the fact that the Rockefeller Foundation appropriated funds to the American Film Center in New York City for a three-year period for research



in the types of films now being used for teaching purposes in medicine and in public health and for recommendations on improvements and other types of such films as are needed. The evaluation work is now being carried on at the Center and suggestions are being made as to the type of films needed in these fields.

Films are now being used in Delaware to teach about tuberculosis, nutrition, home nursing, first aid, venereal disease, and dental hygiene. Frequently it is found that, for health education purposes, motion pictures have a greater appeal than does a speaker.

#### THE SCHOOL AND HEALTH EDUCATION

The school is a valuable avenue to the home in matters of health education. A child's mind accepts new ideas readily and the enlistment of trained educators in support of a health department's objective may convince the child and often, through him, the parents.

It is natural to expect that two such agencies serving all the people—the schools and the health department—should furnish leadership in health education by providing sound health education programs.

#### MOTHERS AND BABIES

Well Child Conferences, as the name implies, are to help mothers keep their babies and pre-school age children well. Valuable health and nutrition advice and teaching may be offered in these clinics.

#### VENEREAL DISEASE

Venereal disease is another field where health education may enlist the support of the public in cutting down organized prostitution and other conditions leading to the spread of syphilis and gonorrhea. Too long has there been a "hush-hush" attitude on the part of the public about this subject. The problem will not be put adequately under control until police, politicians, and the general population are squarely behind it.

The public too often assumes that venereal disease is something "that cannot happen here." Many people who have syphilis do not know that they are infected, that a blood test will reveal the presence of the disease, or that treatment will arrest the trouble and render them non-infectious. Public health education as to the extent of the venereal disease problem and the illness and tragedy that follow in its wake are very necessary if a cam-

paign to stamp out syphilis is to be successful.

Every field of the public health program can be made more effective by the use of adequate health education through one medium or several. It is hoped that preventive medicine through health education will aid toward "health on the home front" in Delaware.

### NURSING SERVICES AVAILABLE THROUGH THE STATE BOARD OF HEALTH

ALBERTA B. WILSON, R. N., M. S.,\*

Dover, Del.

Where there is no local visiting nurse organization, such as we have in Wilmington or Newark, the State Board of Health nurses give *bedside care* in any type of illness for the purpose of teaching some responsible person in the home. The Red Cross Home Nursing courses have reached many homes and frequently it is possible to find a member of a family or a neighbor who is able to care for the sick person properly with only some help from the nurse. Recently, a doctor referred a young woman with cancer. She had two small children and the father, trying to work, care for two children and a sick wife, was desperate. The Board of Health nurse gave the woman care and taught a relative who came to stay with the family. Later it was necessary to have a practical nurse. The Board of Health nurse and the doctor worked together on this and through funds provided by the local cancer society, a practical nurse was secured. In several weeks, the disease reached a terminal stage and hospital care for this patient became necessary. This is a splendid example of doctor and community nurse working together with agencies available in the area, to meet the needs of individuals in the community.

*Antepartum Care:* General instructions in the hygiene of pregnancy by the public health nurse has long been a service of the Board of Health. "Medical care early in pregnancy and periodic medical care as designated by the physician," are probably the words most frequently spoken by every public health nurse. The nurse calls the physician for orders, and to find out how much he wishes her to do. Recent services added to the general

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visit made to teach the hygiene of pregnancy are taking of blood pressure and collection of urine specimens. These services are rendered only by order of the attending physician.

*Home Delivery Nursing Care:* In a small area of Sussex County, from Georgetown to Frankford, the Board of Health has made arrangements to provide home delivery nursing services to patients otherwise unable to secure such services, for those physicians requesting it for their patients. This was done after a study revealed that the most home deliveries occurred in this area. Inactive nurses in the area are prepared to answer the doctors call. Subsequent visits for postpartum and newborn care are made by the Board of Health nurses. All over the state a similar arrangement is in effect for patients eligible for the Emergency Plan for Soldiers Wives. A roster of inactive nurses throughout the state has been set up so that when the physician calls for local Health Unit the nurse living nearest the patient can be contacted. Postpartum and newborn nursing care in the home is also included during the fourteen days after delivery.

*Postpartum and Newborn Care:* Hospitals outside Wilmington have been notified that the Board of Health nurses will provide nursing care to those patients discharged from the hospital before the usual time. This service was offered when hospitals, because of lack of space, began discharging patients as early as the fifth postpartum day.

As birth notices come in, the nurses call physicians to offer services as bedside care, formula demonstration, and baby bath demonstration. Many mothers with their first baby and women delivered at home find these services particularly helpful. The nurse may visit in the home weekly to assist in health supervision of the mother until she has had her six weeks postpartum examination and until the baby is off to a good start. The sixth week visit to the physician for postpartum examination is emphasized as a part of the health supervision of every mother.

*Infant and Preschool Health Supervision:* Nurses have been instructed in dietary needs of the average normal child at various age levels and carry diet instruction sheets. These diet instruction sheets are distributed to pri-

vate physicians' patients only with the recommendations of the physician. Nurses will make periodic visits, and refer the child to the physician in accordance with his instructions or when any deviation from the normal is noted.

*Venereal Disease Follow-up:* Many patients are referred to private physicians as a part of the public health nursing program in case finding. The public health nurse can help the physician with case holding, too, if he will refer those patients who lapse treatment. She can visit the patient and interpret to him the need for treatment. The patient's confidence is preserved in every instance. This procedure has been very satisfactory in many cities among a goodly number of physicians.

*Tuberculosis Nursing:* While patients are confined to bed at home, awaiting admission to a sanatorium or having refused sanatorium care, the public health nurse can be of invaluable help. She can also help the patient newly discharged from the sanatorium. Bedside nursing and general instructions regarding diet, routine, isolation, and disposal of sputum are all part of the nurses' teachings. She can help the patient and his family to a better understanding of the disease, and give the patient security and confidence by seeing his point of view about the changes he is forced to make. She can help the family in their necessary adaptation to the needs of the patient.

*Communicable Disease Nursing:* In any kind of communicable disease, the public health nurse will give general health instructions and teach a member of the family to give bedside care and proper care of the mouth. She will demonstrate methods of isolation, and concurrent and terminal disinfection. Further care by the family will be supervised by the nurse and given as needed.

To meet the medical care crisis, planned efforts have been and are being instituted to assist physicians to conserve their time and strength for the most necessary services and for services which only they can give. Public health nurses can supplement the services of physicians at certain times in certain ways in order to make the most of local health resources remaining for the civilian population.

Summary of nursing services available through the Delaware State Board of Health.

1. Bedside care for all types of illness, acute or chronic.
2. Antepartum health supervision.
3. Home delivery service for (1) those eligible for the "Emergency Plan for Maternity Care to Soldiers' Wives," and (2) in a small area of Sussex County (Georgetown to Frankford).
4. Postpartum and newborn nursing care.
5. Infant and preschool health supervision.
6. Venereal disease follow-up of lapsed cases.
7. Nursing care and instruction for tuberculosis patients and their contacts.
8. Nursing care and instruction for patients with all types of communicable disease.

#### THE PHYSICIAN'S ROLE DURING FOOD SHORTAGES

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It is common knowledge these days that doctors' offices are so crowded it is most difficult to get an appointment, and even then one must resign oneself to a long wait. Physicians are influential members of the community; they have earned the respect and confidence of the people by a long record of public service. Logically, they were among the first to be called at the beginning of this war and characteristically, their response was instantaneous and generous, though it meant that those left at home would have greatly increased responsibilities.

In times of national emergency all people are called on to apply their particular skills to the benefit of the nation. So it is that now, notwithstanding increased responsibilities resulting from the absence of many of their colleagues on the battlefield, physicians see the need for practicing more preventive medicine in addition to therapeutic services in the interest of national strength.

#### NUTRITION IMPORTANT ASPECT OF PREVENTIVE MEDICINE

One of the most important aspects of preventive medicine is nutrition; nourishing, well-chosen foods are vital to building a strong

healthy population. When there is a shortage of food, feeding problems become uppermost in peoples' minds, and who is better qualified to cope with them than the physician? Is he not the one to interpret symptoms of malnutrition in terms that a layman can understand?

Jolliffe <sup>(1)</sup> gives a clear picture of early symptoms of nutritional depression both in children and adults, which laymen should be taught to recognize. They include lack of appetite, failure to eat adequate breakfast, lassitude and chronic fatigue, loss of weight, lack of mental application, loss of strength, sore mouth or sore tongue, chronic diarrhea, nervousness and irritability, paresthesias, frequent colds, nightblindness, photophobia, burning or itching of the eyes, lacrimation, muscle and joint pains, sore bleeding gums, and sores at the angles of the mouth.

Jolliffe, also suggests that in addition to these symptoms physicians need to be increasingly aware of the signs of nutritional depression which only they can interpret, as vascularization of the cornea; xerosis conjunctivae, Vincent's stomatitis; minimal changes in color and texture of the tongue such as red, swollen lingual papillae and papillar atrophy; muscle tenderness in the extremities; poor muscle tone; loss or impairment of vibratory sensation in the toes; changes in the tendon reflexes with particular emphasis on loss of ankle jerks; skin lesions of pellagra; non-specific vaginitis; follicular hyperkeratosis of exterior surface of the extremities; and rachitic deformities.

#### BASIC 7 FOODS

The Food and Nutrition Board of the National Research Council has set up a standard of dietary allowances which are needed for optimum health. To meet these a selection from eight specific food groups was recommended. In view of the current shortage of proteins, two of these original eight groups (namely, eggs and the meat, poultry and fish group) were combined in one in the Basic 7 chart. A color typical of foods of the group was assigned to each group and colored posters of the Basic 7 have been widely distributed. They recommend eating some food from each group every day as follows:

\* Nutritionist, Delaware State Board of Health.



- Group I Green and yellow vegetables (Green)
- Group II Oranges, tomatoes, grapefruit (Orange)
- Group III Potatoes and other vegetables and fruits (Blue)
- Group IV Milk and milk products (White)
- Group V Meat, Poultry, Fish or Eggs (Red)
- Group VI Bread, flour, cereals (Brown)
- Group VII Butter and Fortified Margarine (Yellow)

#### PROSPECTIVE SUPPLIES OF FOOD

Nutrition teaching, to be practical, must be based upon current supplies and the prospects for the future supply of food. We have felt the shortage of protein and fat in their rationing. We are likely to feel it more in the event of regional or national milk rationing. Considering the variety of nutrients milk provides, milk is the most important single food and present standards of a quart of milk daily for children and pregnant women, one pint for adults should not be relaxed until circumstances compel it. If milk and cheese are limited, other good sources of calcium should be stressed. These include kale, turnip greens, broccoli, dried beans and soybeans. In addition, physicians can encourage the use of home produced meat, soybeans and peanut products to increase protein in the diet.

Rationing of commercially canned vegetables and fruits has doubtless cut their consumption, both in quantity and kind by shifting demand to products with lower point prices. A notable example is canned tomatoes which have long been a popular vegetable and a valuable source of vitamin C. Confronted by the high point price of canned tomatoes and the relatively high money price of citrus fruits and fresh tomatoes at this time, it is likely that many families will be eating scorbutic diets unless they learn of and use other vitamin C rich foods, as fresh raw cabbage and green pepper, strawberries, and cantaloupe. Even in season these foods are too expensive for some families to buy.

Sugar rationing has been a boon to health workers. Consumption of sugar in this country has increased from a few pounds yearly

a century ago to an annual prewar consumption of over 100 pounds. <sup>(2)</sup> Considering the fact that refined sugar contributes only energy Jolliffe <sup>(1)</sup> suggests that only enough sugar be retained in the diet to make food palatable, and it and most of the other vitamin-free or vitamin-poor foods be eliminated from the diet. In this group he includes candy, jams, jellies, highly-milled grain products that are not enriched (corn and rice cereals, hominy, white rice, rice pudding, cornstarch desserts), sweetened carbonated beverages and alcohol. The role of thiamine in completing the oxidation of carbohydrates makes increased amounts of thiamine necessary whenever excess carbohydrate is ingested. Through the years people have come to prefer highly refined cereals; thus our most dependable source of B vitamins has been devitalized to a large extent. Recognizing this, Pett <sup>(3)</sup> explodes the theory that sugar decreases fatigue when he states "Under certain circumstances in a diet otherwise marginal with respect to thiamin, there is no doubt that the consumption of sugar may actually increase rather than decrease fatigue." Wilder <sup>(4)</sup> shares this view, especially in regard to soft drinks.

#### WHOLE GRAINS VITAL TO EFFICIENT WORK

The one food group we are told we will have ample supplies of is cereal. Of some 40 nutrients needed by the human body, the whole wheat kernel supplies parts of 37. Milling the grain to white flour removes all but 7 of these nutrients. Enrichment, which is now compulsory, adds back 4 more nutrients, making a total of 11. The comparative value of whole grain versus enriched products is apparent—while enriched foods are better than non-enriched, whole grain products are best.

It would seem desirable that efforts be directed toward increasing consumption of whole grains, especially in the light of recent research. An editorial in the Journal of the American Medical Association <sup>(5)</sup> concludes that since the quality of protein in wheat bran and germ (milled out in white flour) is of higher biological value we should keep in those protein constituents, not to mention the vitamins. Recent evidence <sup>(6)</sup> indicates that dental health requires an adequate amount of B vitamins. Several recent reports <sup>(7)</sup>, <sup>(8)</sup>,

(<sup>9</sup>) including a report from the Harvard Fatigue Laboratory (<sup>10</sup>) have indicated that a lack of B complex in the diet of trained men causes decreased work output, lack of pep and anorexia, without clinically recognizable signs of deficiency disease. It is notable that menus in (<sup>8</sup>) might appear on an average American table. On the other hand, Keys and Henschel (<sup>11</sup>) reported that on the basis of their work with 26 soldiers receiving adequate diets, administration of excess vitamins does not improve physical vigor or capacity to work. Thus consumption of more whole grain products would supply ample natural B vitamins in the normal diet and release sorely needed synthetic vitamins for therapeutic use elsewhere.

#### CONCLUSION

Physicians are the logical teachers of health through better nutrition. Instruction must be practical and attuned to the times. The Basic 7 should be a guide for checking food habits. Since supplies of animal protein are limited, the use of complete vegetable proteins as soybeans and peanuts should be encouraged. Milk consumption should be adequate as long as possible, and if restricted, more green leaves and dried beans should be eaten. The abundant supply and increasing importance of whole grains, both for their protein and vitamin content, warrants their universal use. Most vitamin- and mineral-free products as sugar, jams, jellies, highly milled cereals, carbonated soft drinks and alcohol should be eliminated from the diet, retaining only enough sugar to make food palatable. Finally, physicians can help to avert hysteria because of dwindling food supplies by reassuring the public that health can be maintained, and in so doing will contribute to our national strength.

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### DELAWARE'S WARTIME DENTAL PROGRAM

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In Delaware, as in all other states, every effort is being made to meet the wartime dental needs of the people. This naturally involves problems that are not encountered in times of peace but the dental profession, together with closely related professional groups, is determined that measures will be found that will enable it to cope with the situation.

First, we have not only a poor distribution of dentists but a scarcity of dentists as well. Like the physicians, the quota of Delaware dentists now in the military services has been greatly over-subscribed. Delaware has approximately 1 dentist for each 5000 population, while the national ratio is 1 dentist for each 2500 population. Dentists have gone from communities where even in ordinary times, adequate dental services were not available. The influx of industrial workers, not only those working in war production plants here but many from adjacent over-crowded industrial areas, has noticeably increased our problems.

All this has caused the dental profession grave concern and they question how to accomplish the greatest amount of good under present circumstances. Logically, the answer to that question, at least in part, is to see that all high school students are provided with necessary dental attention before graduation, particularly those who expect to enter military service or civilian war activities. This program, while placing an added burden upon the shoulders of civilian practitioners, should help to prevent future absenteeism in industry and to relieve to some extent the dentist in military service. (There are approximately 13,000 dentists responsible for the dental needs of millions of fighting men—many of whom were first rejected because of neglected mouths and later, when physical standards were lowered, reclassified for service.)

To this end, it is planned that all 11th and 12th grade students in all high schools throughout Delaware will be examined by the dental hygienists employed by the State

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Board of Health and the Board of Education in Wilmington. Since examinations of such a nature, made in past years, have revealed that many of our students are in excellent dental condition, this examination may serve as a weeding out process, thus saving the dentist more time to devote to those who are in need of dental care. Such students as are found to have defects will be urged to go to their own family dentist, but in cases where this is economically impossible every effort will be made to help in providing financial assistance.

For such a small state, we do have a fair quota of industries, and it is unfortunate that not one of these plants employs either full-time or part-time dentists or other dental personnel. A survey was made several months ago by a committee appointed by the State Dental Society to ascertain what provisions are made for dental care for industrial workers in Delaware. As a result of this committee's work, the State Dental Society has indicated its willingness to give priority dental appointments to industrial workers in need of emergency dental care. This was done out of consideration for the shortage of available dentists for industrial work. Since the American Dental Association, cooperating with the United States Office of Education and the United States Public Health Service in the nation-wide High School Victory Corps Physical Fitness Dental Program, have made a similar request (priority appointments for high school students) it is not difficult to visualize what can and probably will happen to the civilian population not engaged in critical war jobs as far as adequate dental care is concerned.

Even so, we all realize that the war effort must come first. We will continue our efforts in health education for all groups as in the past, stressing in particular better nutrition and better daily home care. While these two factors are but complementary to the prevention of dental caries they are, none the less, essential to good mouth hygiene. Moreover, constant repetition and emphasis does produce a consciousness of mouth health that will prevail when adequate dental service for all is again available.

Dr. Walter Pelton, U. S. Public Health

Service, in the July, 1943, issue of the American Journal of Public Health discussing Gearing Dental Public Health to Meet Wartime Conditions <sup>(1)</sup> asks the question "How can civilian dental needs (general health conservation and care of specific dental diseases) be met under the conditions created by war?" Further, he states: "To deal effectively with the problem, it is necessary that:

1. Dentists remaining in civil life be distributed in the population according to the most favorable ratio permissible.

2. Industrial and vital war areas be supplied with dental facilities in order that no person shall be absent from his job because of the lack of basic dental services. This applies both to the factories and nearby housing developments.

3. The usual school dental service programs be extended to include services to high school pupils. The gap in services between elementary school children and those in high school should be closed as rapidly as possible. The manpower to supply dental service to these categories may have to be assigned by procurement agencies, if objectives cannot be obtained from voluntary efforts.

4. Sub-professional personnel be utilized to the fullest possible extent.

5. In critical areas it may be wise to request that highly refined appliances and replacements be not constructed until some more opportune time, and thus permit a health service type of dentistry to be rendered to a large number of patients.

6. In extreme circumstances, a system of priority of patients, which will give first consideration to the most productive members of the community, may be advisable."

Our wartime dental program in Delaware as it now stands includes some of the measures suggested by Dr. Pelton, and it may be necessary to include others if and when the situation becomes more critical. In our opinion, however, the first four measures suggested would prove a decided asset to any state or community dental program at any time, and we would like to see them incorporated in our permanent dental program.

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## Editorial

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#### THANKS

When the New Series of THE JOURNAL began in 1929 the Publication Committee decided that the issues of the fourth, eighth and twelfth months should be special ones. Thus, the April issue is the Mental Hygiene Number, the August issue the State Board of Health Number, and the December issue the Transactions Number of the Society and its House of Delegates. There have been occasional minor variations in the dates of the first and third special numbers, but the State Board of Health Number has invariably been the August issue, since its inauguration by Dr. Arthur C. Jost in 1930.

This year, with a shortage of personnel and with unusual demands upon his facilities, the Executive Secretary of the Board tried to beg off, but the Editor, wrapping himself around the Secretary's neck like a boa constrictor, refused to be shaken off and vowed

that a precedent of so many years could not be broken, war or no war. And so the Secretary, perhaps more in pity than passion, gracefully yielded and thus we have, war or no war, another State Board Number. By one of those funny quirks of fate this issue is not only longer but better than the average "Board" number, and at least two of the twelve articles are of outstanding merit.

The only controversial article is the one on "Maternal and Infant Care for Wives and Infants of Enlisted Men," which is described by Dr. Marion Hoptopp (why does she spell her first name with an "o" instead of an "a"?). This proposition, sired by the *paters* in paternal Washington and wet-nursed by those States which agree to knuckle down to the Federal dispersing hand, i. e., the too high taxes that you and we have paid, and here we break forth into verse and say:

The hand that holds the purse-strings  
Is the hand that controls *all* things!

is not popular with those physicians of Delaware with whom we have talked. They regard it as rampant bureaucracy in an insidiously delectable form, and another bang on the Federal entering wedge of State medicine, along with the other proposition labeled: "Plants in Aid." Maybe our opinion doesn't count, but we fully agree with them. This particular proposition has already become a political issue, and in this connection one must bear in mind three things: (1) There is a Presidential election coming next year; (2) There are approximately 12,000,000 men in the services who control approximately 18,000,000 votes; and (3) The gang that has fed at the Federal troughs for the past twelve years would dearly love to feast there, another four years! This last item is a natural—who wouldn't rather feast than work? THE JOURNAL simply *must* find space in the September issue to reprint the story from Ohio.

But to Dr. Cameron and his entourage THE JOURNAL is glad to extend its congratulations for an unusually good number, and to offer its—small pay—thanks.

# 1789—MEDICAL SOCIETY OF DELAWARE—1943

Meets October 12-13, Wilmington

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## COUNCILORS

Howard E. LeCates, Delmar (1943) F. A. Hemsath, Wilmington (1944) Joseph S. McDaniel, Dover (1945)

## AMERICAN MEDICAL ASSOCIATION

DELEGATE: L. L. Fitchett, Milford (1943) ALTERNATE: C. J. Prickett, Smyrna (1943)

## STANDING COMMITTEES

COMMITTEE ON SCIENTIFIC WORK  
 W. O. La Motte, Wilmington  
 I. W. Mayerberg, Dover  
 E. L. Stambaugh, Lewes

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 AND LEGISLATION  
 J. S. McDaniel, Dover  
 J. D. Niles, Middletown  
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 M. A. Tarumianz, Farnhurst  
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C. E. Wagner, Wilmington E. R. Mayerberg, Wilmington T. H. Davies, Wilmington  
 A. H. Williams, Laurel J. L. Fox, Seaford

## REPRESENTATIVE TO THE DELAWARE ACADEMY OF MEDICINE

W. O. LaMotte, Wilmington

## WOMAN'S AUXILIARY

MRS. E. L. STAMBAUGH, President, Lewes  
 MRS. G. C. McELPATRICK, Vice-Pres. for N. C. County, Wilmington  
 MRS. S. W. RENNIE, Recording Secretary, Wilmington  
 MRS. I. W. MAYERBERG, Vice-Pres. for Kent County, Dover  
 MRS. L. L. FITCHETT, Corresponding Secretary, Milford  
 MRS. JAMES BEEBE, Vice-Pres. for Sussex County, Lewes  
 MRS. A. J. STRIKOL, Treasurer, Wilmington

## NEW CASTLE COUNTY MEDICAL SOCIETY—1943

Meets Third Tuesday

A. J. STRIKOL, President, Wilmington.  
 C. E. NEESE, President-elect, Wilmington.  
 C. E. MARONEY, Vice-President, Wilmington.  
 C. L. HUDIBURG, Secretary, Wilmington.  
 J. M. MESSICK, Treasurer, Wilmington.

Board of Directors and Nominating  
 Committee: C. E. Wagner, 1943; B.  
 M. Allen, 1944; W. F. Preston, 1945.

Delegates: 1943: B. M. Allen, L.  
 W. Anderson, T. H. Baker, W. E. Bird,  
 A. L. Heck, C. L. Hudiburg, J. D. Niles,  
 C. E. Wagner, A. J. Strikol. 1944: E.  
 M. Bohan, Ira Burns, J. J. Cassidy,  
 C. H. Davis, L. B. Flinn, P. R. Smith,  
 M. A. Tarumianz, B. S. Vallett, G. W.  
 Vaughan, N. W. Voss

Alternates: 1943: D. D. Burch, I. L.  
 Chipman, D. T. Davidson, J. R.  
 Downes, G. W. K. Forrest, J. W. Kerri-  
 gan, W. W. Lattomus, W. L. Lee, C. C.  
 Neese. 1944: Julian Adair, G. J.  
 Boines, J. W. Butler, K. M. Corrin, G.  
 H. Gehrmann, H. W. Gray, J. F. Hynes,  
 E. L. Kreiger, J. C. Pierson, L. J.  
 Rigney.

Board of Censors: E. R. Miller, 1943;  
 W. E. Bird, 1944; L. J. Jones, 1945; L.  
 J. Rigney, 1946; L. B. Flinn, 1947.

Program Committee: C. C. Neese, A.  
 J. Strikol, C. E. Maroney.

Legislative Committee: E. R. Mayer-  
 berg, G. H. Gehrmann, D. W. Lewis,  
 M. A. Tarumianz, G. W. Vaughan.

Necrology Committee: Ira Burns,  
 G. J. Boines, E. M. Bohan.

Auditing Committee: Charles Levy,  
 J. J. Cassidy, N. W. Voss.

Public Relations Committee: C. E.  
 Wagner, G. W. K. Forrest, L. J. Jones,  
 J. S. Keyser, A. D. King.

Medical Economics: W. E. Bird, C.  
 H. Davis, Lewis Flinn, L. J. Rigney,  
 R. Smith.

## KENT COUNTY MEDICAL SOCIETY—1943

W. C. DEAKYNE, President, Smyrna.  
 F. R. EVERETT, Vice-President, Dover.  
 H. W. SMITH, Secretary-Treasurer, Har-  
 rington.  
 Delegates: C. J. Prickett, I. J.  
 MacCollum, William Marshall, Jr.  
 Alternates: Stanley Worden, S. M.  
 D. Marshall, A. V. Gilliland.  
 Censors: H. V.P. Wilson, H. W.  
 Smith, W. T. Chipman.

## DELAWARE ACADEMY OF MEDICINE—1943

Open 10 A. M. to 1 P. M.  
 Meeting Evenings

W. H. KRAEMER, President.  
 E. R. MILLER, First Vice-President.  
 J. D. BROWN, Second Vice-President.  
 D. T. DAVISON, SR., Secretary.  
 J. M. MESSICK, Treasurer.

Board of Directors: C. M. A. Stine,  
 J. K. Garrigues, W. S. Carpenter Jr.,  
 H. A. Carpenter, F. H. Gawthrop, Mrs.  
 Ernest du Pont, H. G. Haskell, S. D.  
 Townsend, L. B. Flinn.

## DELAWARE PHARMACEUTICAL SOCIETY—1943

Honorary Presidents: Walter L. Mor-  
 gan, Wilmington; George W. Rhodes,  
 Newark; Albert Dougherty, Wilming-  
 ton.

President: H. S. Kiger, Wilmington.  
 First Vice President: G. M. Sparks,  
 Clayton.

Second Vice President: C. E. John-  
 son, Newark.

Third Vice President: E. A. Truitt,  
 Rehoboth.

Secretary: Albert Bunin, Wilming-  
 ton.

Treasurer: Albert Dougherty, Wil-  
 mington.

Board of Directors: H. S. Kiger,  
 Wilmington; E. D. Bryan, Dover; C.  
 E. Johnson, Newark; W. L. Lougen-  
 dyke, Seaford; F. P. Ragains, Milford.  
 Legislative Committee: Thomas Don-  
 alson, chairman.

## SUSSEX COUNTY MEDICAL SOCIETY—1943

N. R. WASHBURN, President, Milford.  
 H. S. RIGGIN, Vice-President, Seaford.  
 A. H. WILLIAMS, Secretary-Treasurer,  
 Laurel.  
 Delegates: Bruce Barnes, K. J.  
 Hocker, D. V. James, R. S. Long.  
 Alternates: F. A. B. Allen, H. S.  
 Le Cates, H. S. Riggins, E. L. Stam-  
 baugh.  
 Censors: O. V. James, J. R. Elliott,  
 U. W. Hocker.

## DELAWARE STATE DENTAL SOCIETY—1943

J. A. CASEY, President, Wilmington.  
 P. K. MUSSELMAN, First Vice-Pres.,  
 Wilmington.  
 MORRIS GREENSTEIN, Second Vice-  
 Pres., Wilmington.  
 C. M. COX, Secretary, Newark.  
 C. F. PIERCE, Treasurer, Wilmington.  
 Delegate to A. D. A.: P. A. Tray-  
 nor, Wilmington.

## DELAWARE STATE BOARD OF HEALTH—1943

Bruce Barnes, M. D., President,  
 Seaford; Mrs. F. G. Tallman, Vice-  
 President, Wilmington; Mrs. Caroline  
 Hughes, Secretary, Middletown; J. D.  
 Niles, M. D., Middletown; W. T. Chip-  
 man, M. D., Harrington; W. H. Speer,  
 M. D., Wilmington; W. B. Atkins,  
 D. D. S., Millsboro; Mrs. C. M. Dillon,  
 Wilmington; Edwin Cameron, M. D.,  
 Executive Secretary, Dover.

## MEDICAL COUNCIL OF DELAWARE

Hon. Daniel J. Layton, President;  
 J. S. McDaniel, M. D., Secretary; A.  
 K. Lotz, M. D.

## BOARD OF EXAMINERS, MEDICAL SOCIETY OF DELAWARE

J. S. McDaniel, President and Sec-  
 retary; Wm. Marshall, Assistant Sec-  
 retary; W. E. Bird, W. T. Chipman, P.  
 R. Smith.



**LAWRENCE J. JONES, M. D.**  
PRESIDENT of the MEDICAL SOCIETY of DELAWARE  
**1 9 4 3**